PRIME Display Matrix Configuration User Guide

Version 5.1

March 2025

SINCE DAY ONE.

Chyron PRIME Display Matrix Configuration User Guide • 5.1 • March 2025 • This document is distributed by Chyron in online (electronic) form only, and is not available for purchase in printed form.

Table of Contents

See the separate document on creating EDIDs: *GPU Render EDID Guide.pdf

PREREQUISITES

Choosing Correct Cables: DisplayPort

On each HX/MX Display Matrix PRIME system is a NVIDIA Quadro P5000 with 4 DisplayPort connectors. These DisplayPort GPU outputs will be powering the Display Matrix. It is important to note that all DisplayPort cables support the same infrastructure. However, there is a difference in cable quality. To ensure the highest quality cable is used, it is recommended purchasing a DisplayPort certified cable. Cables not certified are subject to poor video quality or loss of video output.

More information about choosing correct DisplayPort cables can be found here.

Additionally, DisplayPort certified cables can be found here.

Choosing Correct Cables: HDMI

Some clients may choose to convert their DisplayPort signal to HDMI. In these instances it is important to purchase the proper HDMI cable as well. However, unlike DisplayPort cables, not all HDMI cables support the same specifications.

For video wall solutions it is recommended purchasing a cable that supports a minimum 4K at 60Hz. These specifications can be delivered with a Premium High Speed HDMI Cable. More information on the Premium High Speed HDMI cable can be found here.

The purchase of the Ultra High Speed HDMI cable is also available for clients who wish to ensure they are using the highest quality cable. More information can be found here.

Premium and Ultra High Speed HDMI certified cables and can be found here.

Choosing Monitors That Fit Your Solution

Verify that the monitors in your configuration natively support the Refresh Rate intended to be used in the Display Matrix solution. Mismatching Refresh Rates will result in stuttering video.

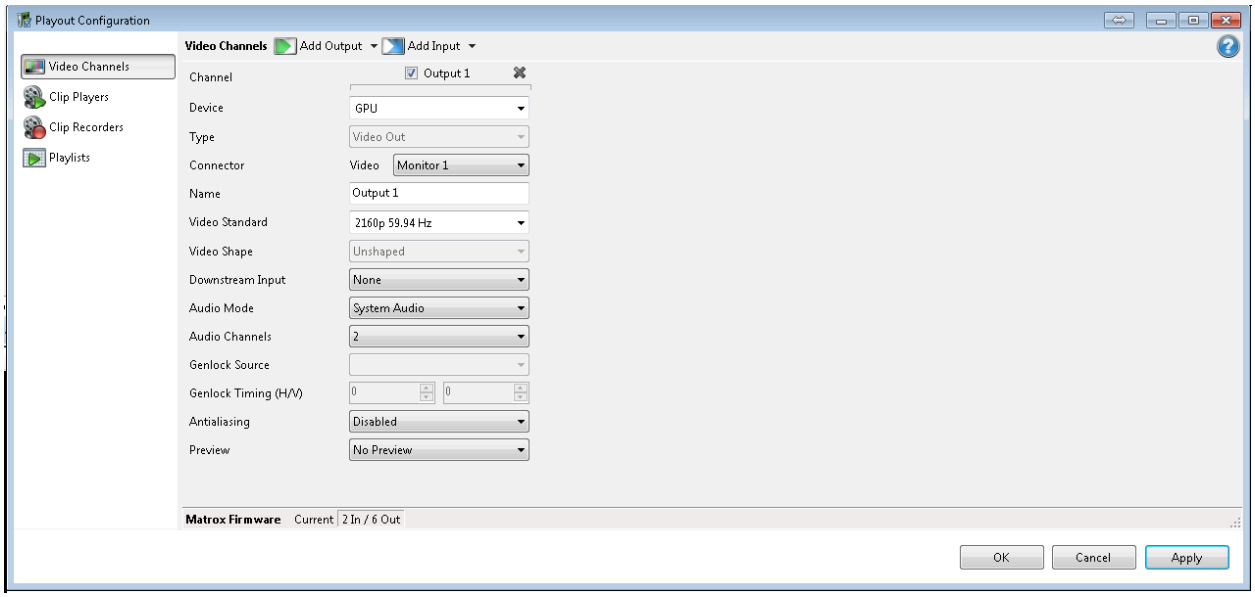
What About HDR?

HDR is supported with NVIDIA Quadro P5000, and as stated above, all DisplayPort cables support the same infrastructure. So once again it is important to purchase a DisplayPort certified cable.

The same caution will need to be taken when purchasing HDMI cables for a HDR solution. The minimum recommended cable continues to be the Premium High Speed HDMI Cable.

Configuring the Display Matrix

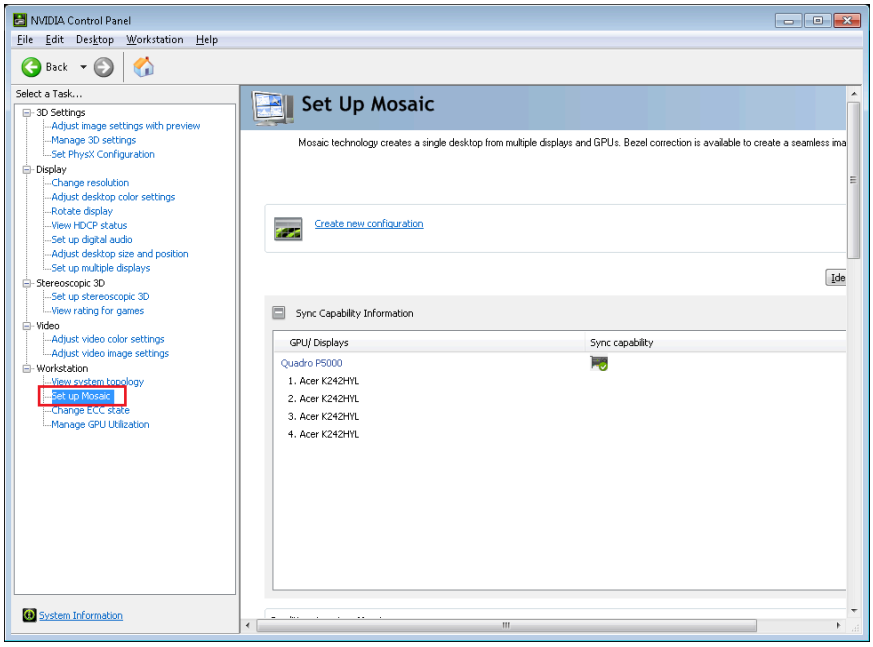
1) PRIME Playout Configuration Needs To Be Setup Initially As Shown Below



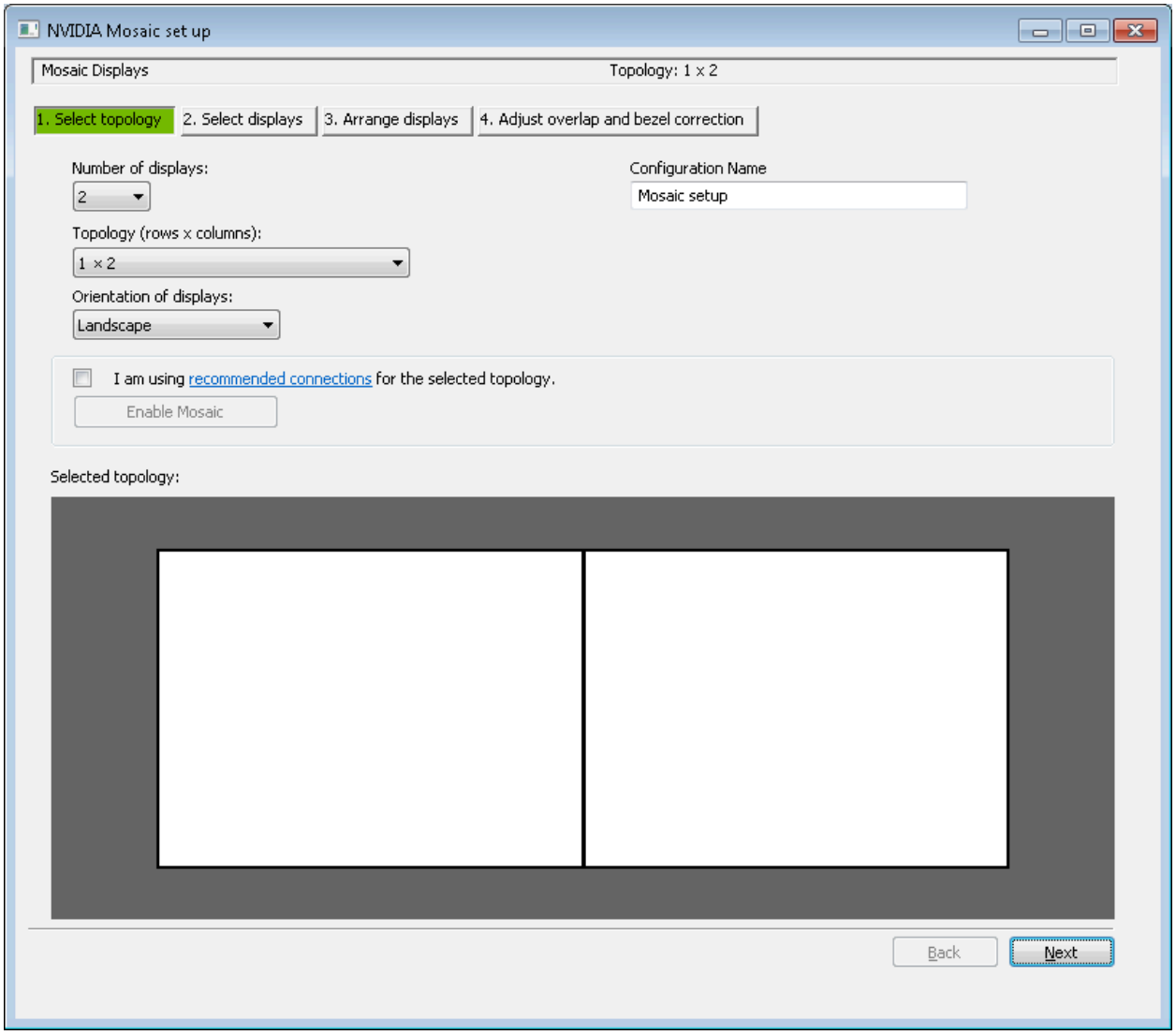
Please note the Video Standard resolution is nonstandard.
With this Setup, it allows us to configure 1 GPU across 4 Monitors Maximum

2) Setting up the Display Matrix Mosaic

Launch Nvidia Control Panel and click on **Set Up Mosaic** as shown below.

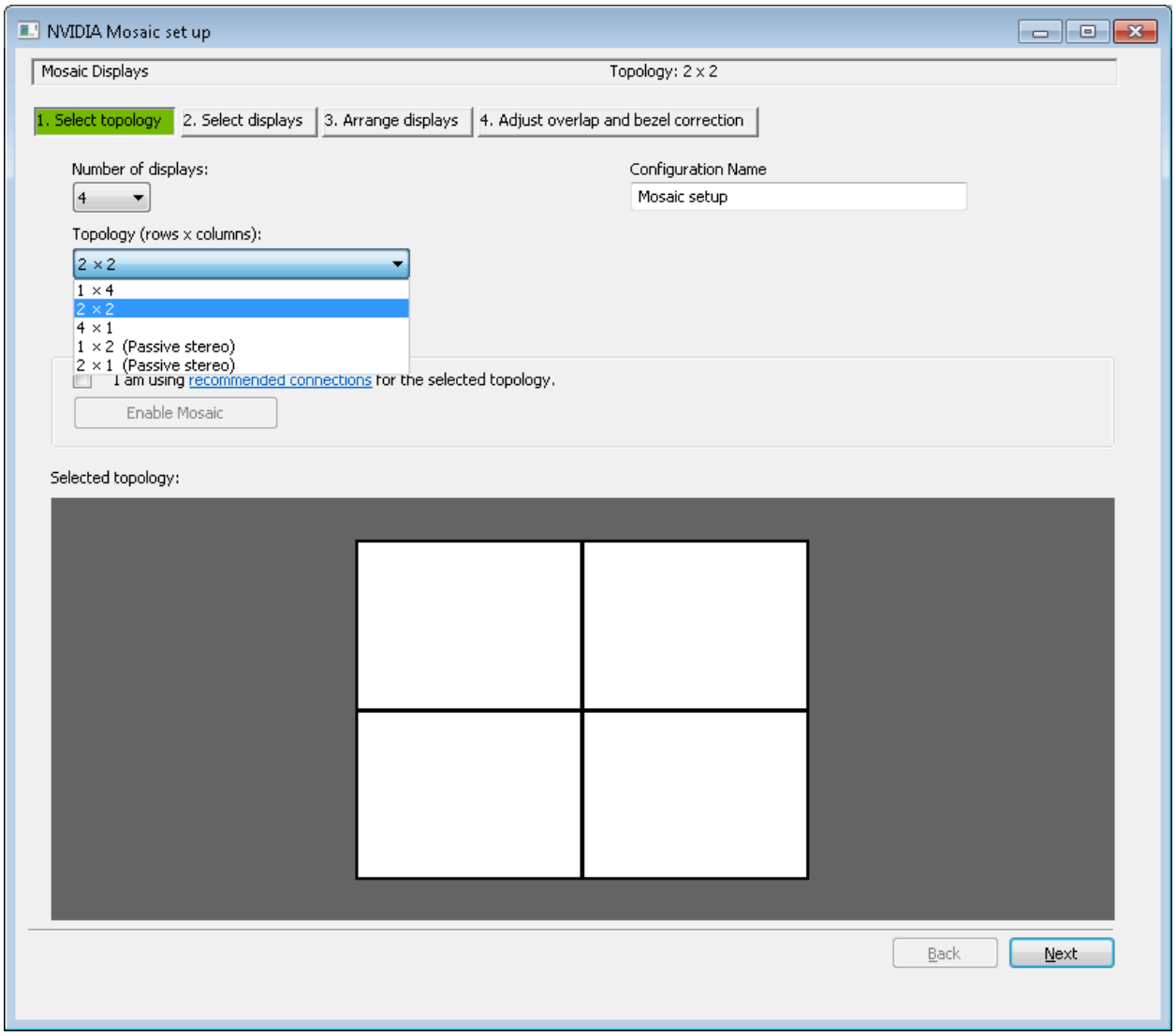


Click on **Create New Configuration**, that opens Nvidia Mosaic Setup Window as shown below.

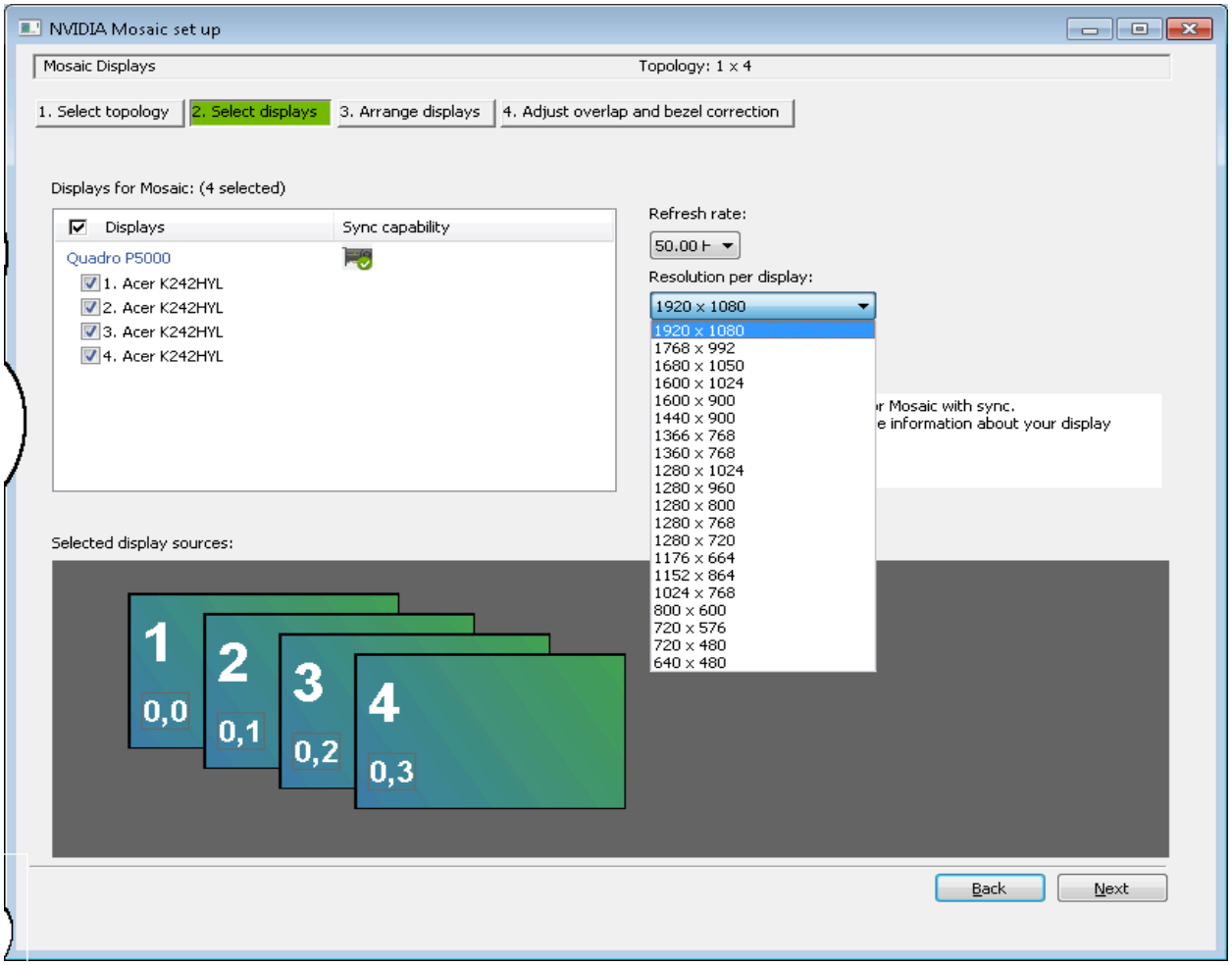

NVIDIA Mosaic set up
Mosaic Displays
Topology: 1 x 2
1. Select topology
2. Select displays
3. Arrange displays
4. Adjust overlap and bezel correction
Number of displays:
2
Configuration Name
Mosaic setup
Topology (rows x columns):
1 x 2
Orientation of displays:
Landscape
I am using recommended connections for the selected topology.
Enable Mosaic
Selected topology:
Back
Next

Select Number of Displays and Topology one would like to set up along with Configuration Name.

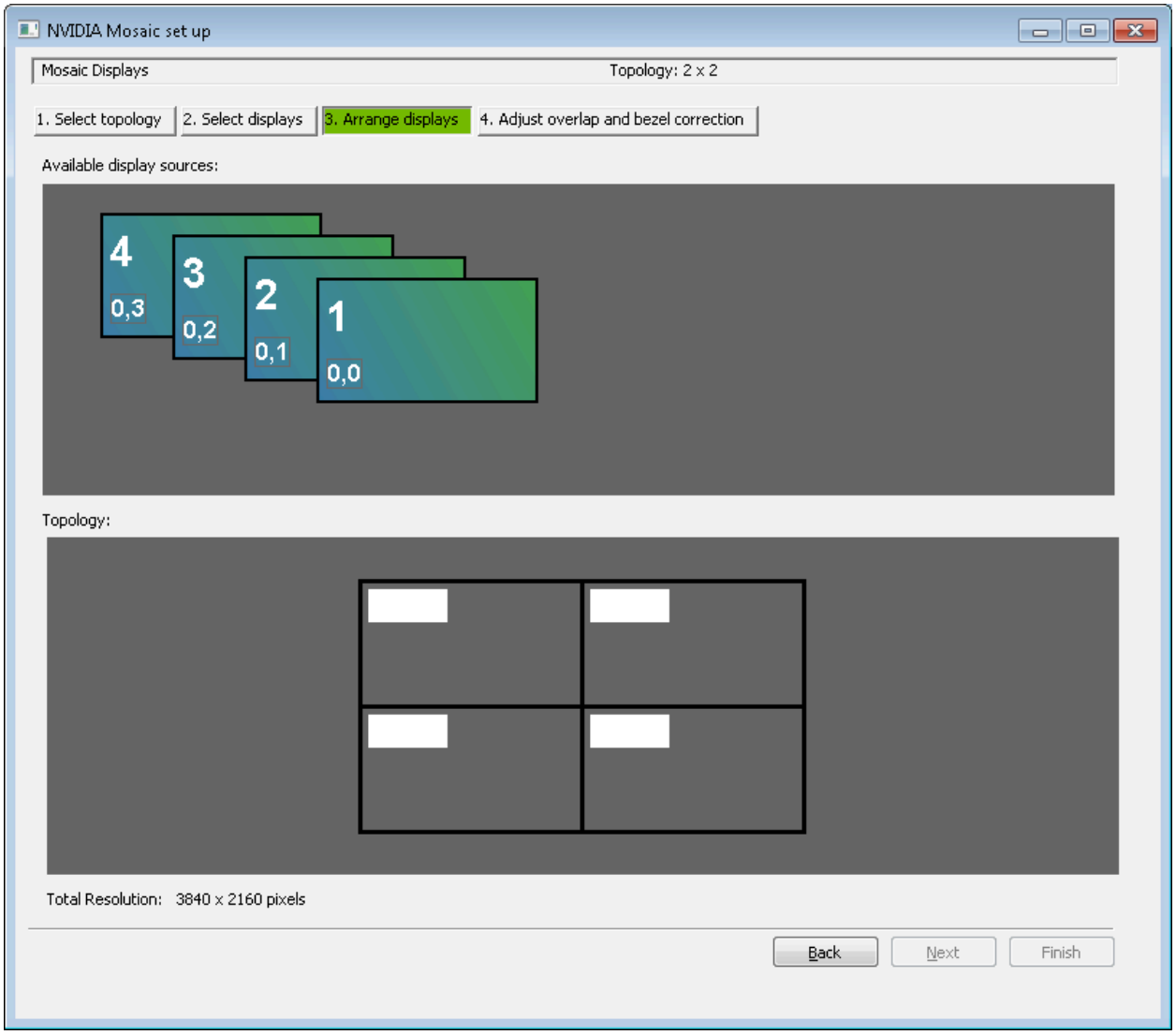
*Following example shows Number of displays: 4; Topology : 2x2



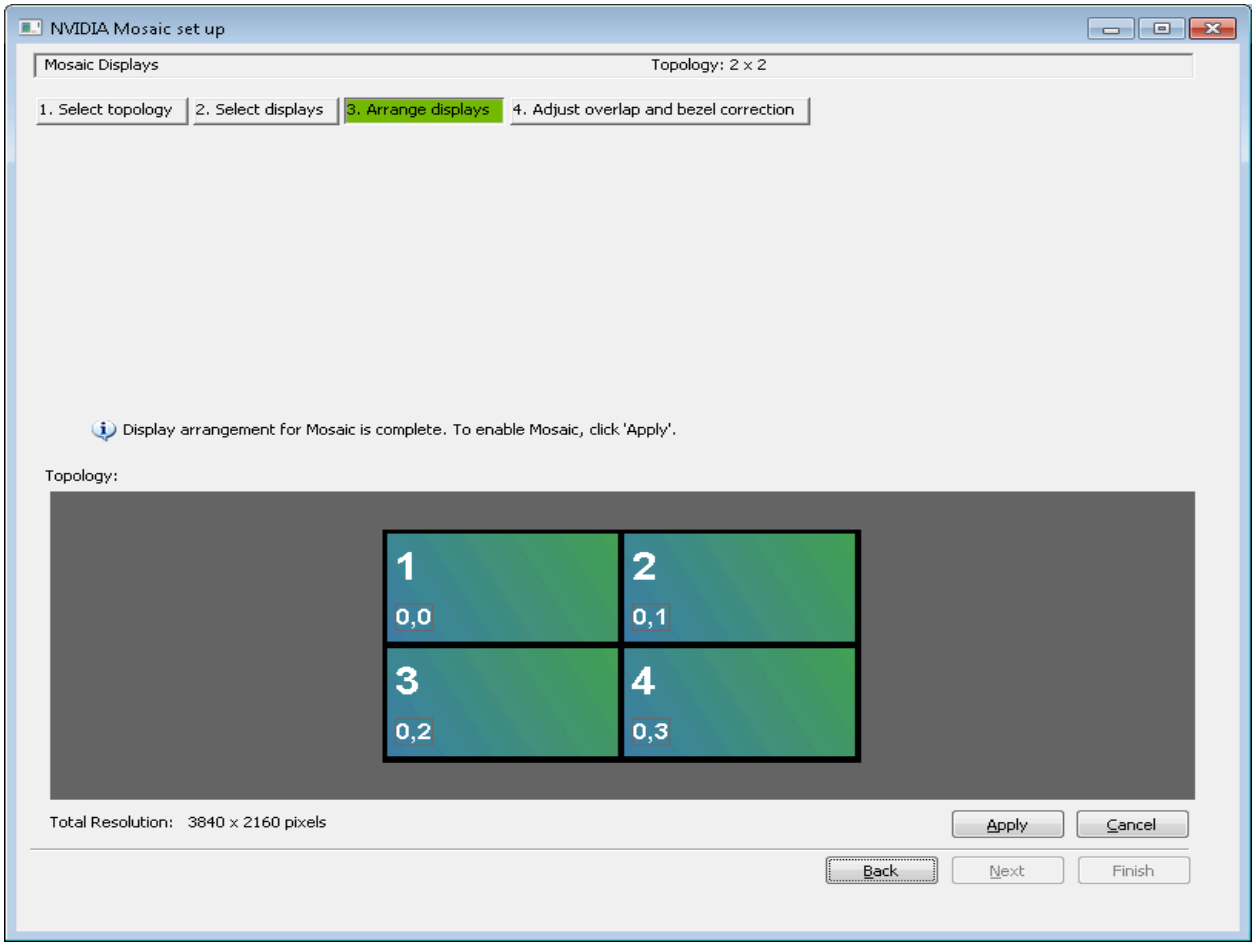
Click **Next** and Select Displays that you would like to use in this topology on the next page
Refresh Rate and Resolution per display can be set here using their respective dropdowns



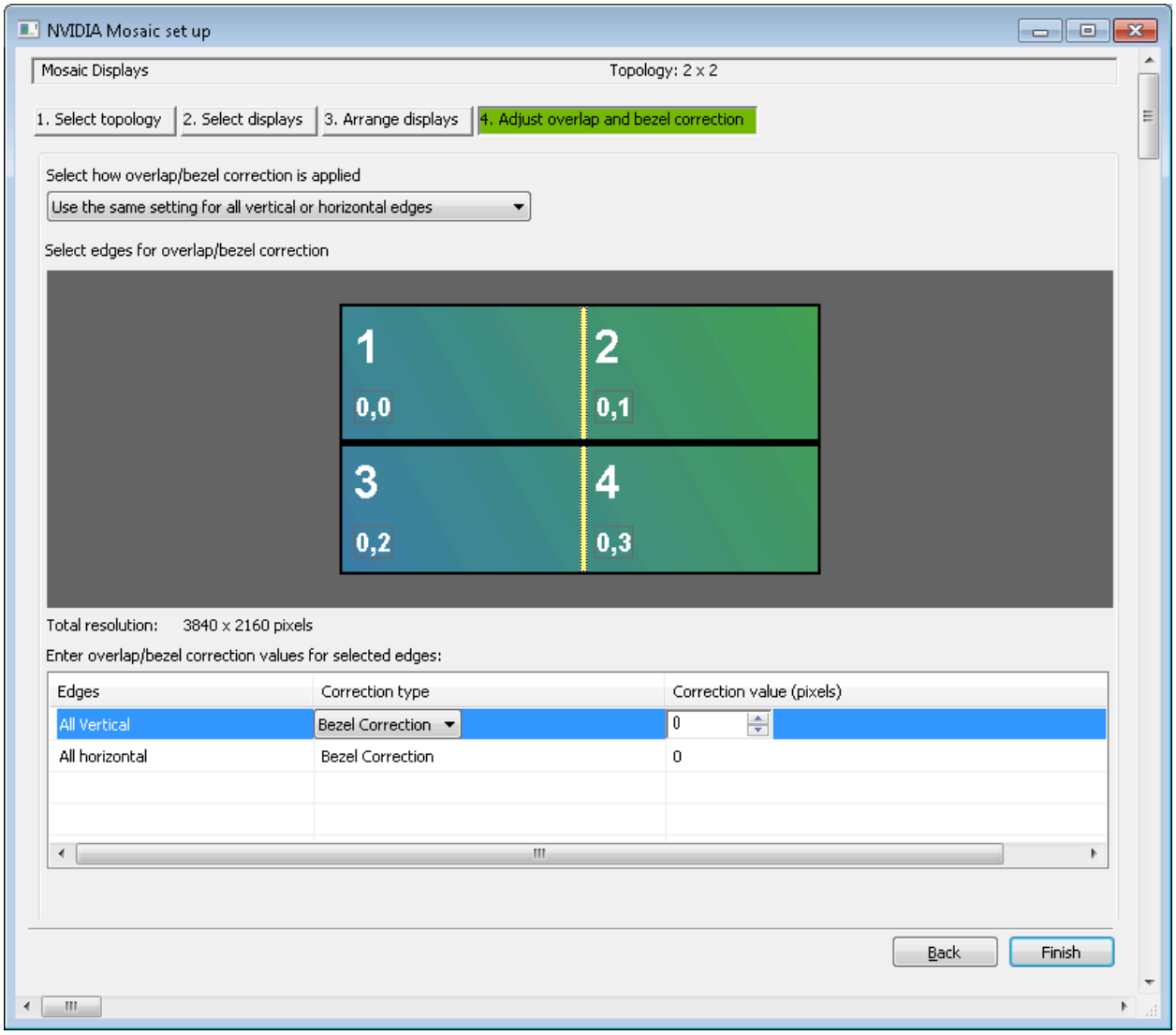
Click **Next** and move on to Arranging Displays in your Topology as shown below



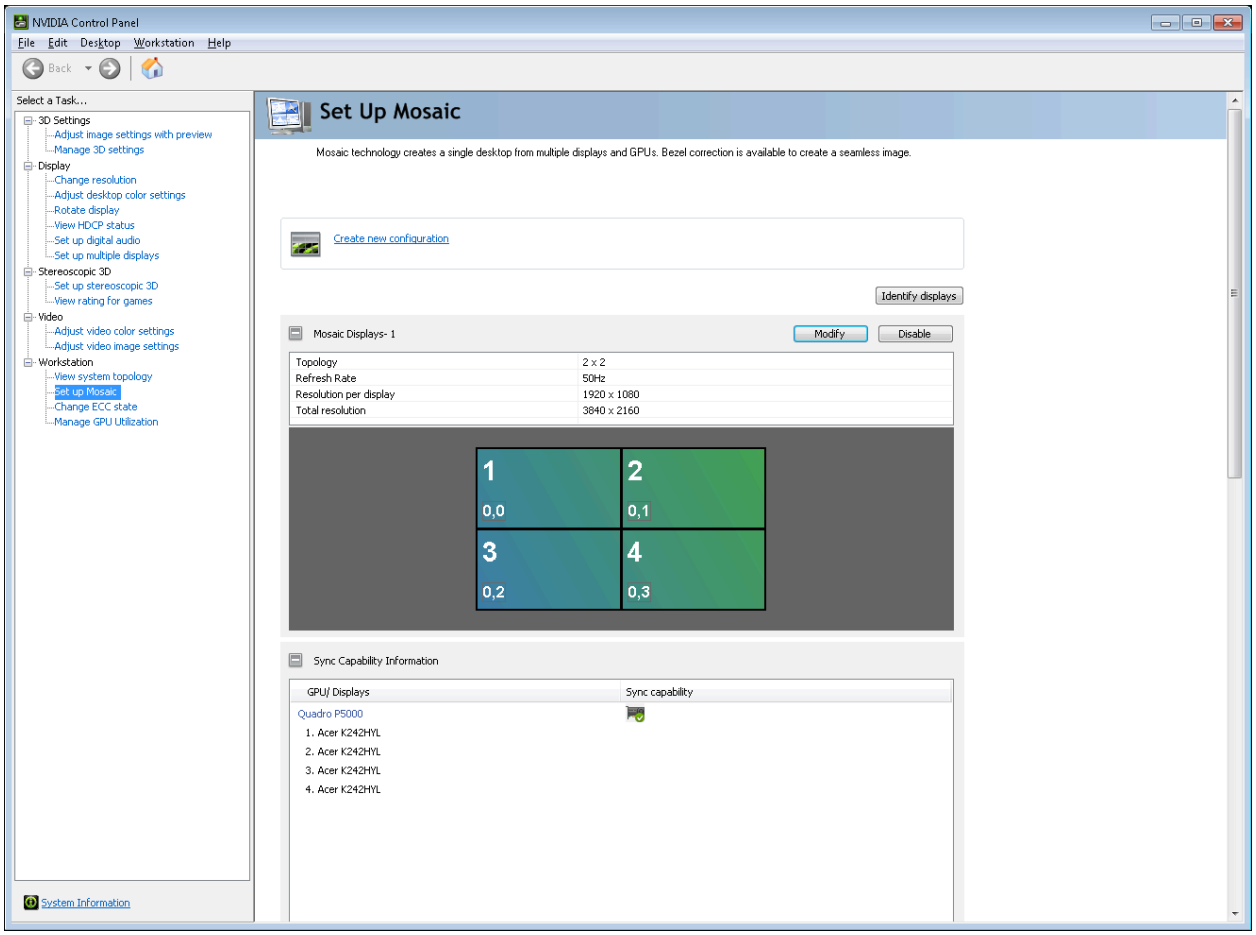
Drag and Drop Displays according to tour Topology requirements and Click **Apply** and Click **Next** when Topology is applied.



Adjust the overlap and bezel correction looking at the display monitors and click **Finish.**



Final Mosaic Setup has been applied that lists all the properties of your Topology
One can Click on **Modify** and Modify the Topology to make any changes required or **Disable** the Mosaic Setup to go back to default settings.

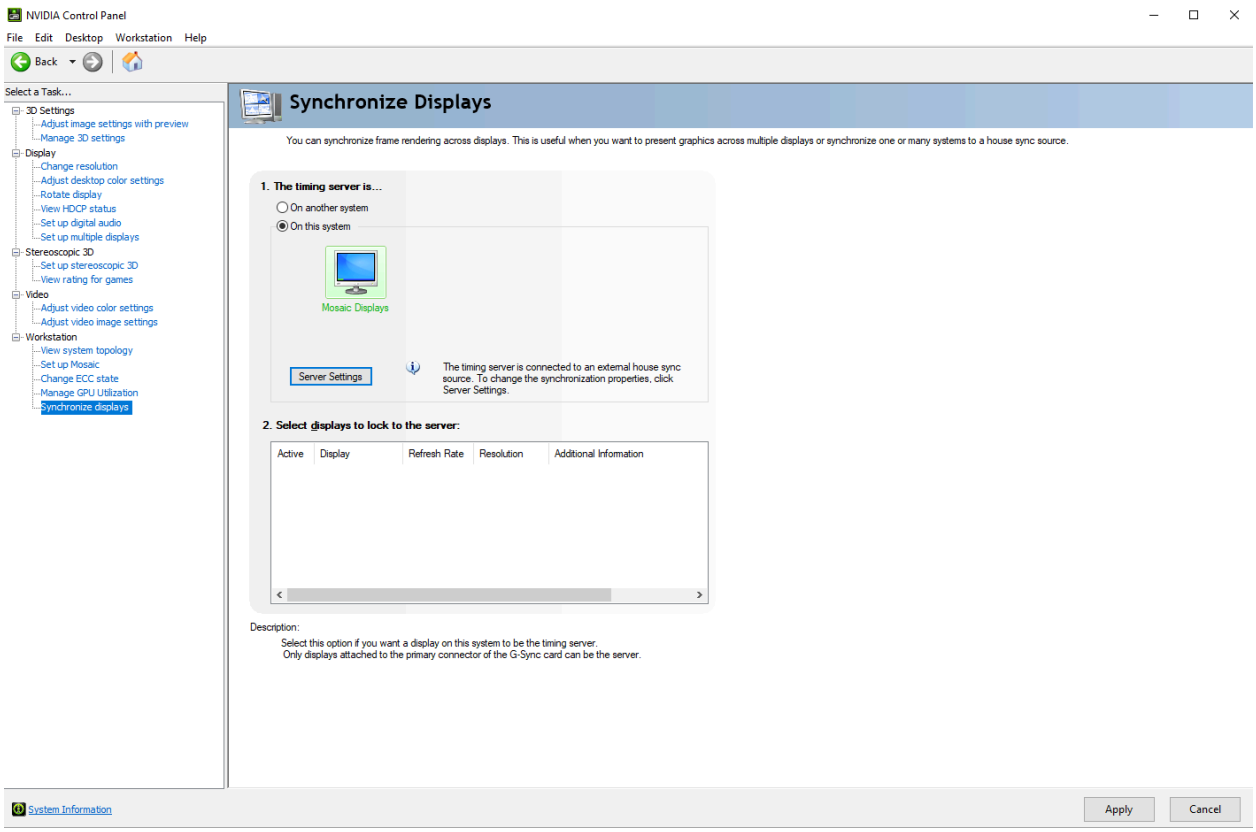


3) Configure EDID

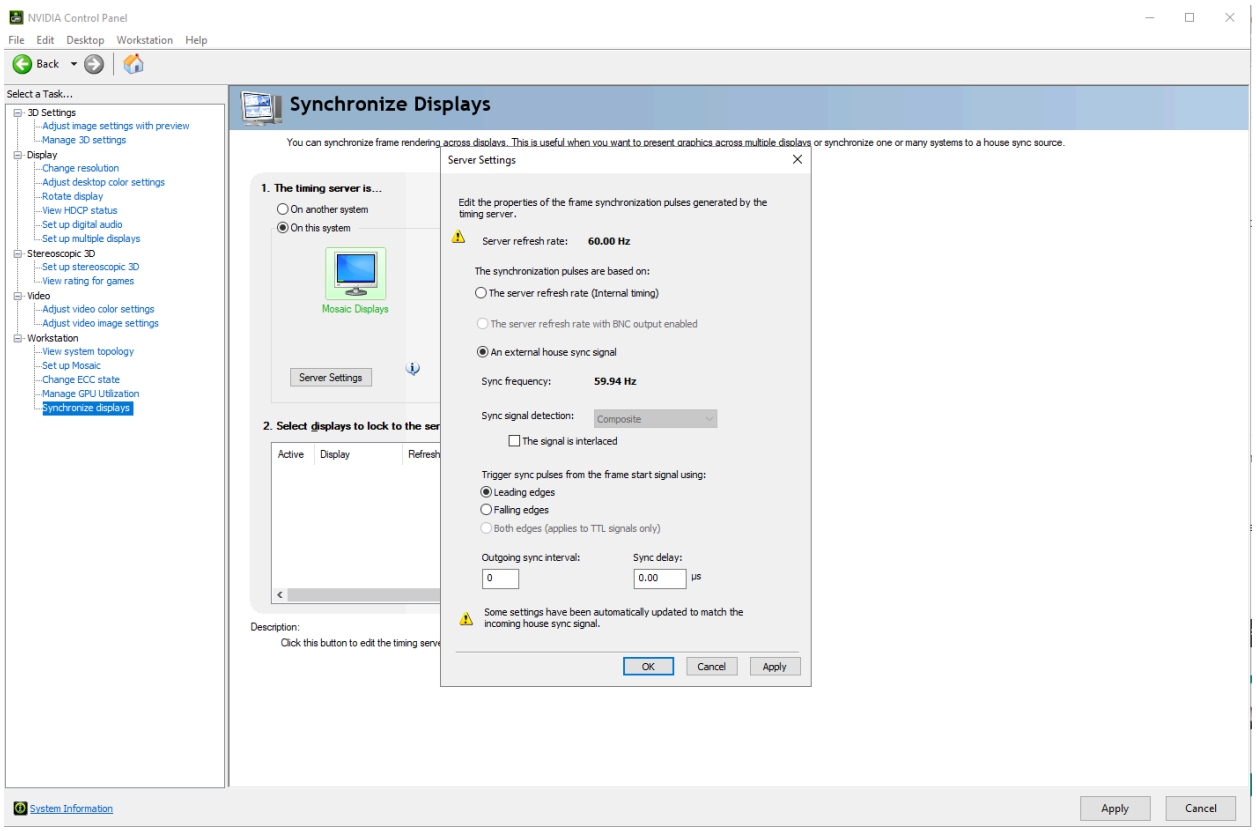
Refer to GPU Render EDID Guide

4) Set NVIDIA Quadro Sync

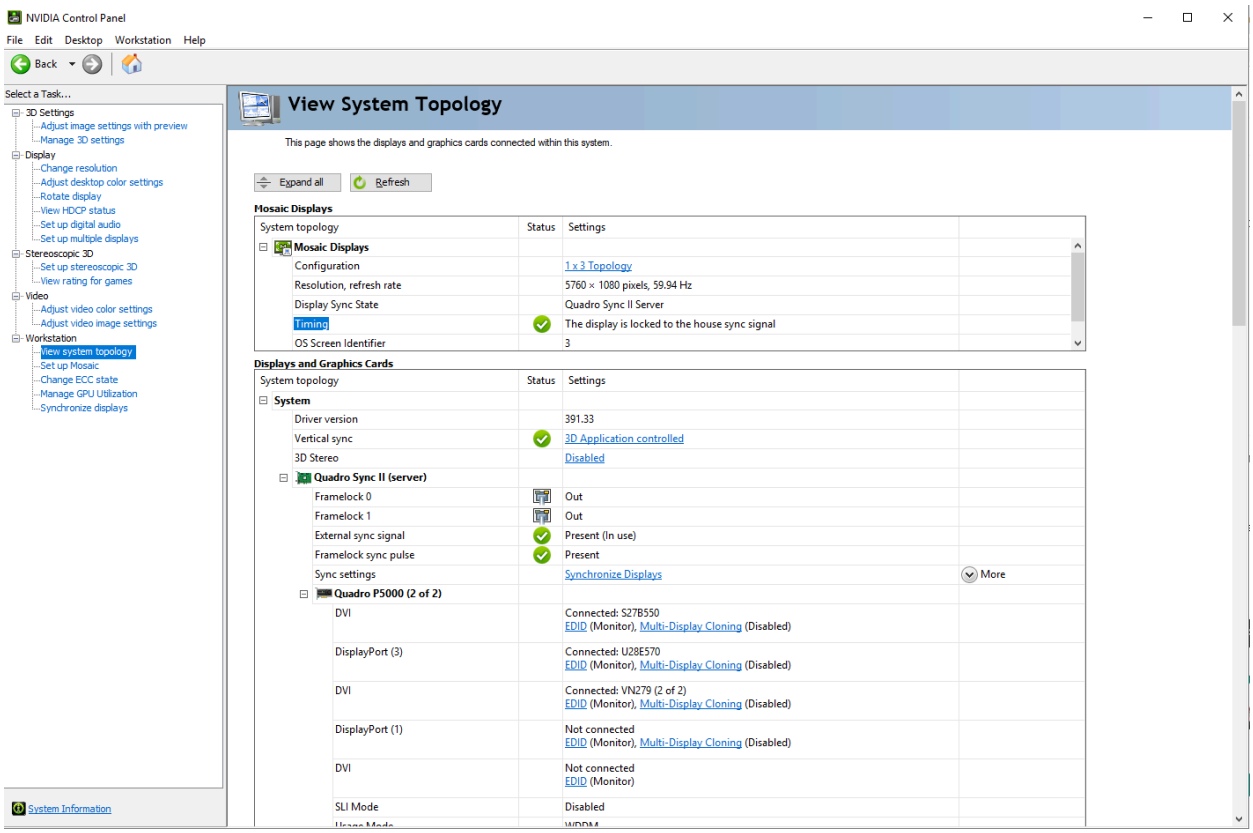
When using the optional Matrox BNC video inputs as part of the PRIME Display Matrix solution, the NVIDIA Quadro Sync must be configured. This ensures that the refresh rate of the monitor is synchronized to the refresh rate of the source video. Both the Matrox and NVIDIA cards should receive reference in, and both can take either bi-level or tri-level sync. This should be configured after the NVIDIA Mosaic.
Open NVIDIA Control Panel and select Synchronize displays. Notice the configured Mosaic is the only option in this configuration. Choose the Mosaic and click Server Settings.



Set the synchronization pulses to be based on an external house signal.



Once the changes have been applied refer to View System Topology. Confirm that Mosaic Displays Timer is locked to house sync signal, that External Sync Signal is Present (In Use), and that the Framelock Sync Pulse is Present.

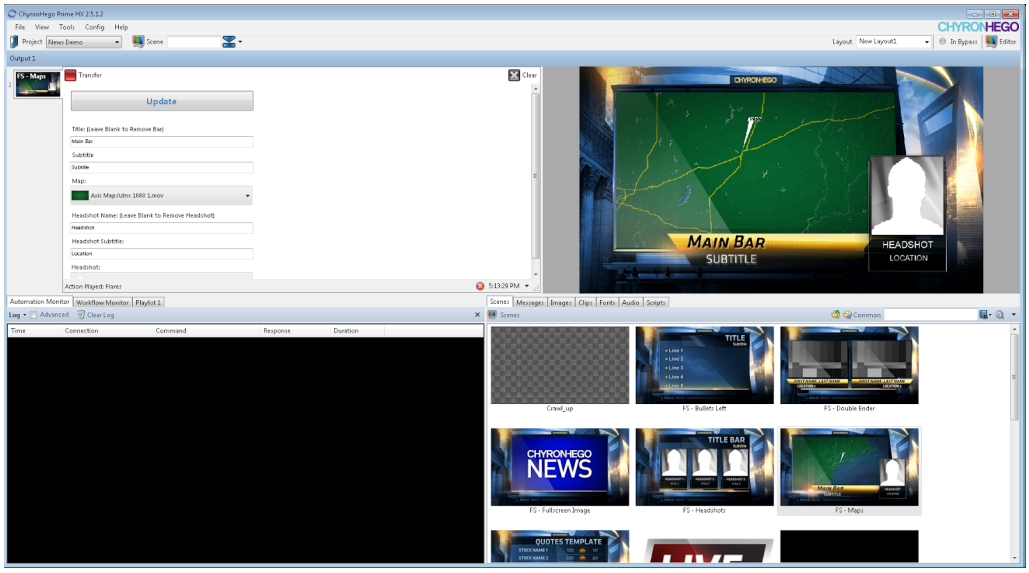


5) Double check Windows display settings

It's important to make sure that the Windows Display settings are set properly. Right-click on the desktop and navigate to the Display Settings. Ensure that Scale and Layout as well as Display Resolution are using the recommended settings.

6) Play graphics

Launch Prime Application and Play any Scene on the Output channel, it should display the Graphic across all those 4 Display devices



ABOUT US

Chyron is ushering in the next generation of storytelling in the digital age. Founded in 1966, the company pioneered broadcast titling and graphics systems. With a strong foundation built on over 50 years of innovation and efficiency, the name Chyron is synonymous with broadcast graphics. Chyron continues that legacy as a global leader focused on customer-centric broadcast solutions. Today, the company offers production professionals the industry's most comprehensive software portfolio for designing, sharing, and playing live graphics to air with ease. Chyron products are increasingly deployed to empower OTA & OTT workflows and deliver richer, more immersive experiences for audiences and sports fans in the arena, at home, or on the go.

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